

10/540830

JC17 Rec'd PCT/PTO 24 JUN 2005

IN THE CLAIMS:

Please cancel claims 1-32 without prejudice or disclaimer, and substitute new
Claims 33-64 therefor as follows:

Claims 1-32 (cancelled).

33. (New) A water-resistant telecommunication cable comprising a longitudinal cavity extending along the length of the cable and a solid and compact element housing at least one transmitting element, wherein the solid and compact element is associated with the cavity and comprises a water-soluble polymer material comprising:

a vinyl alcohol/vinyl acetate copolymer having a hydrolysis degree of about 60% to about 95% and a polymerisation degree higher than about 1,800;

at least a first solid plasticizer, having a melting point between 50° and 110°C, and a second solid plasticizer, having a melting point equal or higher than 140°C, in an amount of about 10-30 and 1-10 parts by weight per hundred parts by weight of the copolymer, respectively;

the water-soluble polymer material showing:

a complex modulus (G^*) equal or higher than $2.5 \cdot 10^6$ MPa;

a ratio of the viscous modulus to the elastic modulus ($\tan \delta$) equal or lower than 2.30; and

a glass transition temperature (T_g) of about 20° to about 35°C.

34. (New) The cable according to claim 33, wherein the solid and compact element comprises about 30% by weight or more of the water-soluble polymer material.

35. (New) The cable according to claim 33, wherein the solid and compact element comprises about 50% by weight or more of the water-soluble polymer material.

36. (New) The cable according to claim 33, wherein the solid and compact element comprises about 75% by weight or more of the water-soluble polymer material.

37. (New) The cable according to claim 33, wherein the solid and compact element is a structural element of the cable.

38. (New) The cable according to claim 37, wherein the structural element is a tubular element comprising at least one sheath made of the water-soluble polymer material, and wherein the cavity is defined by the inner volume of the tubular element.

39. (New) The cable according to claim 38, wherein the tubular element is a single sheath completely made of the water-soluble polymer material.

40. (New) The cable according to claim 38, wherein the tubular element is a double layer sheath having an inner layer made of the water-soluble polymer material and an outer layer made of a water-insoluble polymer material.

41. (New) The cable according to claim 38, wherein the tubular element is a three-layer sheath, having inner and outer layers made of the water-soluble polymer material and an intermediate layer being made of a water-insoluble polymer material.

42. (New) The cable according to claim 33, wherein the solid and compact element is a buffer tube and the transmitting element is an optical fibre.

43. (New) The cable according to claim 33, wherein the copolymer comprises about 50% to about 95% of the total weight of the water-soluble polymer material.

44. (New) The cable according to claim 33, wherein the copolymer comprises about 60% to about 85% of the total weight of the water-soluble polymer material.

45. (New) The cable according to claim 33, wherein the copolymer has a hydrolysis degree of from about 70% to about 92% and a polymerisation degree of about 2,500 to 3,700.

46. (New) The cable according to claim 33, wherein the copolymer has a polymerisation degree of about 3,000 to 3,500.

47. (New) The cable according to claim 33, wherein the first and the second plasticizers are present in an amount of about 12-25 and 3-7 parts by weight per hundred parts by weight of the copolymer, respectively.

48. (New) The cable according to claim 33, wherein the first and second plasticizers are polyhydric alcohols.

49. (New) The cable according to claim 33, wherein the first plasticizer is selected from sorbitol, trimethylolpropane, di-trimethylolpropane, methylpropyl propanediol, and mixtures thereof, and the second plasticizer is selected from mannitol, pentaerythritol, dipentaerythritol, trimethylolethane, and mixtures thereof.

50. (New) The cable according to claim 33, wherein the first plasticizer is trimethylolpropane or di-trimethylolpropane and the second plasticizer is pentaerythritol or dipentaerythritol.

51. (New) The cable according to claim 33, wherein the first and the second plasticizer are present in an amount of about 20 and about 5 parts by weight per hundred parts by weight of said copolymer, respectively.

52. (New) The cable according to claim 33, wherein the water-soluble polymer material further comprises a third plasticizer, which is liquid at room temperature, in an amount of about 0.5-10 parts by weight per hundred parts by weight of the copolymer.

53. (New) The cable according to claim 52, wherein the third plasticizer is a polyhydric alcohol.

54. (New) The cable according to claim 52, wherein the third plasticizer is selected from glycerol, ethylene glycol, diethylene glycol, triethylene glycol, propylene glycol, dipropylene glycol, tripropylene glycol, trimethylolpropane ethoxylates, pentaerythritol ethoxylates, and mixtures thereof.

55. (New) The cable according to claim 52, wherein the third plasticizer is present in an amount of 2-7 parts by weight per hundred parts by weight of said copolymer.

56. (New) The cable according to claim 52, wherein the third plasticizer is present in an amount of 5 parts by weight per hundred parts by weight of said copolymer.

57. (New) The cable according to claim 52, wherein the third plasticizer is diethylene glycol or triethylene glycol.

58. (New) The cable according to claim 33, wherein complex modulus (G^*) is between $3.0 \cdot 10^6$ and $4.0 \cdot 10^6$ MPa.

59. (New) The cable according to claim 33, wherein $\tan\delta$ is between 0.5 and 2.0.

60. (New) The cable according to claim 33, wherein T_g is between 25° and 30°C .

61. (New) The cable according to claim 33, wherein the water-soluble polymer material comprises a hydrolysis stabilizer compound comprising a chelant group comprising two hydrogen atoms bonded to two respective heteroatoms selected from

nitrogen, oxygen and sulfur, said two hydrogen atoms having a distance between each other of from 4.2×10^{-10} m to 5.8×10^{-10} m, said stabilizer compound being present in an amount of at least 0.75 mmoles per 100 g of the copolymer.

62. (New) The cable according to claim 61, wherein the stabiliser is N,N'-esan-1,6-diylbis[3,5-di-ter-butyl-4-hydroxyphenyl) propionamide].

63. (New) A method for maintaining loose a transmitting element of a water-resistant telecommunication cable, upon the extrusion thereof, comprising a longitudinal cavity extending along the length of the cable and a solid and compact element housing the transmitting element which comprises preparing the solid and compact element using a water-soluble polymer material comprising:

a vinyl alcohol/vinyl acetate copolymer having a hydrolysis degree of about 60% to about 95% and a polymerisation degree higher than about 1,800;

at least a first solid plasticizer, having a melting point between 50° and 110°C, and a second solid plasticizer, having a melting point equal or higher than 140°C, in an amount of about 10-30 and 1-10 parts by weight per hundred parts by weight of the copolymer, respectively;

the water-soluble polymer material showing:

a complex modulus (G^*) equal to or higher than $2.5 \cdot 10^6$ MPa;

a ratio of the viscous modulus to the elastic modulus ($\tan\delta$) equal to or lower than 2.30; and

a glass transition temperature (T_g) of about 20° to about 35°C.

64. (New) A solid and compact element of a water-resistant telecommunication cable comprising a longitudinal cavity extending along the length of

the cable and the solid and compact element housing a transmitting element for maintaining loose the latter upon extrusion of the cable, prepared from a water-soluble polymer material, comprising:

a vinyl alcohol/vinyl acetate copolymer having a hydrolysis degree of about 60% to about 95% and a polymerisation degree higher than about 1,800;

at least a first solid plasticizer, having a melting point between 50° and 110°C, and a second solid plasticizer, having a melting point equal or higher than 140°C, in an amount of about 10-30 and 1-10 parts by weight per hundred parts by weight of the copolymer, respectively;

the water-soluble polymer material showing:

a complex modulus (G^*) equal to or higher than $2.5 \cdot 10^6$ MPa;

a ratio of the viscous modulus to the elastic modulus ($\tan \delta$) equal to or lower than 2.30; and

a glass transition temperature (T_g) of about 20° to about 35°C.